

REMARKS

Claims 1-2 and 4-11 are all the claims pending in the application. Claim 8 has been rejected under 35 U.S.C. § 112, second paragraph. Claims 1-2 and 4-11 have been rejected under 35 U.S.C. § 102(e).

Claims 1 and 8 have been amended herein.

In Claim 1, at line 6, the typographical error “pf 100° C” has been corrected to “of 100° C.” In Claim 8, the dependency has been changed from Claim 6 to Claim 7.

Response to the Rejection of Claim 8 under 35 U.S.C. § 112, second paragraph

Claim 8 has been rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention.

It is asserted that the recitation “wherein the application liquid is a suspension” on line 2 of Claim 8 does not have antecedent basis.

As indicated above, Claim 8 has been amended to depend from Claim 7. Since Claim 7 provides antecedent basis for “the application liquid,” it is respectfully submitted that the § 112 rejection be reconsidered and withdrawn.

Response to the Rejection of Claims 1-2 and 4-11 under 35 U.S.C. § 102(e)

Claims 1-11 are rejected under 35 U.S.C. § 102(e) as allegedly being unpatentable over U.S. Patent No. 6,447,958 to Shinohara et al (“Shinohara”).

Shinohara is relied upon as disclosing a separator comprising a thermoplastic polymer fiber substrate, a microporous heat-resistant nitrogen-containing aromatic polymer having a

porosity of less than $0.1\ \mu\text{m}$, and a thermoplastic spacer formed from a fine-particle-like suspension. It is asserted that the particle coating of Shinohara (disclosed at col. 10, lines 1-10) encompasses the presently claimed spacer because the coating of Shinohara separates the surface of the heat-resistant layer from an adjacent electrode. See col. 10, lines 1-5, and col. 13, lines 18-23.

It is also asserted that the thermoplastic polymer fiber substrate of Shinohara inherently serves as a shut-down layer because the thermoplastic polyolefins and polyesters taught by Shinohara have melting points suitable for shut-down. Additionally, it is asserted that the heat-resistant layer of Shinohara is inherently microporous since it has void spaces of less than $1\ \mu\text{m}$, and that the heat-resistant layer inherently has a temperature of deflection under load of $18.6\ \text{kg/cm}^2$ of 100°C because Shinohara discloses the same heat-resistant resin material that is set forth by Applicant.

Applicants respectfully submit, however, that Shinohara does not teach the presently claimed separator. Specifically, Applicant submit that contrary to the Examiner's assertion, the particle coating of Shinohara does not embrace the presently claimed spacer.

In Shinohara, the particle coating is obtained by coating a fine particle-like suspension of the thermoplastic polymer; the thermoplastic polymer is preferably used "for imparting or reinforcing shut down property." See col. 10, lines 1-2, of Shinohara. Consequently, the fine particle-like layer of Shinohara functions as a shut-down layer and not a spacer.

In contrast, the presently claimed separator comprises shut-down layer, heat-resistant microporous layer, and a spacer on the surface of the heat resistant microporous layer. Thus, Shinohara does not teach all of the elements recited in Claim 1.

Furthermore, the spacer of the present invention is placed on the heat-resistant microporous layer. Shinohara, however, does not teach placing a spacer on the surface of a heat-resistant microporous layer.

Applicants additionally note that the present invention can be used to provide a non-aqueous electrolyte secondary battery with excellent electrochemical oxidation resistance. Shinohara does not describe separators having this beneficial quality.

In view of the foregoing, Applicants respectfully submit that the § 102 rejection be reconsidered and withdrawn.

Further, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

Amendment Under 37 C.F.R. § 1.111
U.S. Application No. 09/940,474

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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